

What Is Claimed Is:

1 1. A method of providing different quality of services (QOS) in a communication
2 network to data related to different point-to-point sessions, said method comprising:

3 provisioning in a first aggregation device a plurality of virtual circuits, said plurality
4 of virtual circuits being provisioned between said first aggregation device and a second
5 aggregation device located in said communication network, each of said plurality of virtual
6 circuits being provisioned to provide a different QOS;

7 receiving in said first aggregation device a plurality of datagrams, each of said
8 plurality of datagrams being related to a corresponding one of a plurality of point-to-point
9 sessions;

10 determining a point-to-point session to which each of said plurality of datagrams
11 relates to;

12 assigning each of said plurality of datagrams to one of said plurality of virtual circuits
13 depending on the QOS desired for the corresponding point-to-point session; and

14 sending the data in each of said datagrams to said second aggregation device in the
15 form of a packet on a corresponding assigned virtual circuit,
16 whereby different point-to-point sessions receive different QOS.

1 2. The method of claim 1, wherein said packet comprises an asynchronous transfer
2 mode (ATM) cell.

1 3. The method of claim 2, wherein said plurality of virtual circuits supports a tunnel
2 between said first aggregation device and said second aggregation device.

1 4. The method of claim 3, wherein said plurality of virtual circuits are comprised in
2 a virtual circuit (VC) bundle supporting said tunnel, said method further comprising mapping
3 said point-to-point session to said tunnel by examining a table, wherein said table further
4 specifies a precedence value associated with said point-to-point session, wherein said
5 assigning comprises determining said one of said plurality of virtual circuits based on said
6 precedence value, whereby different point-to-point sessions supported on said tunnel receive
7 different QOS.

1 5. The method of claim 1, further comprising indicating in a table the specific one of
2 said plurality of virtual circuits to which each of said plurality of point-to-point sessions is
3 to be assigned, wherein said assigning comprises examining said table.

1 6. The method of claim 1, wherein each of said plurality of datagrams is received
2 according to a layer-3 protocol.

1 7. The method of claim 1, further comprising receiving said packet in said second
2 aggregation device and forwarding the data in said packet to a system related to the
3 corresponding point-to-point session.

1 8. A first aggregation device for providing different quality of services (QOS) in a
2 communication network to data related to different point-to-point sessions, said aggregation
3 device comprising:

4 means for provisioning a plurality of virtual circuits, said plurality of virtual circuits
5 being provisioned between said first aggregation device and a second aggregation device

6 located in said communication network, each of said plurality of virtual circuits being
7 provisioned to provide a different QOS;

8 means for receiving in said first aggregation device a plurality of datagrams, each of
9 said plurality of datagrams being related to a corresponding one of a plurality of point-to-
10 point sessions;

11 means for determining a point-to-point session to which each of said plurality of
12 datagrams relate to;

13 means for assigning each of said plurality of datagrams to one of said plurality of
14 virtual circuits depending on the QOS desired for the corresponding point-to-point session;
15 and

16 means for sending the data in each of said datagrams to said second aggregation
17 device in the form of a packet on a corresponding assigned virtual circuit,

18 whereby different point-to-point sessions receive different QOS.

1 9. The aggregation device of claim 8, wherein said packet comprises an asynchronous
2 transfer mode (ATM) cell.

1 10. The aggregation device of claim 9, wherein said plurality of virtual circuits
2 supports a tunnel between said first aggregation device and said second aggregation device,
3 wherein said plurality of virtual circuits are comprised in a virtual circuit (VC) bundle,
4 wherein said means for assigning first maps said point-to-point session to said tunnel and
5 then assigns the corresponding datagrams to one of said plurality of virtual circuits depending
6 on a QOS desired for the point-to-point session, wherein said QOS desired for the point-to-
7 point session is specified by a precedence value in a table.

1 11. The aggregation device of claim 8, further comprising means for indicating the
2 specific one of said plurality of virtual circuits to which each of said plurality of point-to-
3 point sessions is to be assigned, wherein said assigning comprises interfacing with said means
4 for indicating.

1 12. A first aggregation device for providing different quality of services (QOS) in a
2 communication network to data related to different point-to-point sessions, said aggregation
3 device comprising:

4 an inbound interface receiving a plurality of datagrams, each of said plurality of
5 datagrams being related to a corresponding one of a plurality of point-to-point sessions;

6 a memory indicating one of a plurality of virtual circuits to transfer data related to
7 each of said plurality of point-to-point sessions, each of said plurality of virtual circuits being
8 provisioned to provide a different QOS between said first aggregation device and a second
9 aggregation device on said communication network;

10 a classifier examining each of said plurality of datagrams to determine the specific
11 point-to-point session to which each datagram relates to;

12 an encapsulator generating a packet corresponding to each of said plurality of
13 datagrams, a header of each packet containing a virtual circuit identifier identifying one of
14 said plurality of virtual circuits, wherein said one of said plurality of virtual circuits is
15 determined based on a QOS desired for a corresponding point-to-point session; and

16 an outbound interface sending said packet corresponding to each of said plurality of
17 datagrams on a virtual circuit specified by the corresponding header,

18 whereby the data related to different point-to-point sessions receives different QOS.

1 13. The first aggregation device of claim 12, wherein said memory is configured to
2 indicate the specific one of said plurality of virtual circuits to which each of said point-to-
3 point sessions is to be assigned.

1 14. The first aggregation device of claim 12, wherein said memory is configured to
2 indicate a precedence value representing said QOS desired for each of said point-to-point
3 sessions, and said encapsulator determines said virtual circuit identifier for each of said
4 packets by examining said precedence value.

1 15. The first aggregation device of claim 12, wherein said packet comprises an
2 asynchronous transfer mode (ATM) cell.

1 16. The first aggregation device of claim 13, wherein said plurality of virtual circuits
2 supports a tunnel between said first aggregation device and said second aggregation device,
3 wherein said classifier maps said point to point session to said tunnel first and then said point-
4 to-point session is mapped to said one of said plurality of virtual circuits.

1 17. The first aggregation device of claim 16, wherein said plurality of virtual circuits
2 are comprised in a virtual circuit (VC) bundle.

1 18. The first aggregation device of claim 12, further comprising a table indicating the
2 specific one of said plurality of virtual circuits to which each of said plurality of point-to-
3 point sessions is to be assigned, wherein said assigning comprises examining said table.

1 19. The first aggregation device of claim 12, wherein each of said plurality of
2 datagrams is received according to a layer-3 protocol.

1 20. A computer readable medium carrying one or more sequences of instructions for
2 causing a first aggregation device to provide different quality of services (QOS) in a
3 communication network to data related to different point-to-point sessions, wherein execution
4 of said one or more sequences of instructions by one or more processors contained in said
5 first aggregation device causes said one or more processors to perform the actions of:

6 provisioning in a first aggregation device a plurality of virtual circuits, said plurality
7 of virtual circuits being provisioned between said first aggregation device and a second
8 aggregation device located in said communication network, each of said plurality of virtual
9 circuits being provisioned to provide a different QOS;

10 receiving in said first aggregation device a plurality of datagrams, each of said
11 plurality of datagrams being related to a corresponding one of a plurality of point-to-point
12 sessions;

13 determining a point-to-point session to which each of said plurality of datagrams
14 relates to;

15 assigning each of said plurality of datagrams to one of said plurality of virtual circuits
16 depending on the QOS desired for the corresponding point-to-point session; and

17 sending the data in each of said datagrams to said second aggregation device in the
18 form of a packet on a corresponding assigned virtual circuit,

19 whereby different point-to-point sessions receive different QOS.

1 21. The computer readable medium of claim 20, wherein said packet comprises an
2 asynchronous transfer mode (ATM) cell.

1 22. The computer readable medium of claim 21, wherein said plurality of virtual
2 circuits support a tunnel between said first aggregation device and said second aggregation
3 device, and wherein said plurality of virtual circuits are comprised in a virtual circuit (VC)
4 bundle, said one or more sequences of instructions causing said one or more processors to
5 perform the further action of maintaining a table indicating a mapping of each point-to-point
6 session to said tunnel, wherein said table further indicates a precedence value associated with
7 point-to-point session, wherein said assigning comprises determining said one of said
8 plurality of circuits based on said precedence value.

1 23. The computer readable medium of claim 20, further comprising indicating in a
2 table the specific one of said plurality of virtual circuits to which each of said plurality of
3 point-to-point sessions is to be assigned, wherein said assigning comprises examining said
4 table.

1 24. The computer readable medium of claim 20, wherein each of said plurality of
2 datagrams is received according to a layer-3 protocol.

1 25. The computer readable medium of claim 20, further comprising:
2 indicating the services to be provided to a user;
3 determining said user according to an authentication protocol when a corresponding
4 point-to-point session is established; and

5 indicating the services desired for said user using a session identifier assigned to said
6 corresponding point-to-point session.

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